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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,542	01/23/2006	Oliver Huttenloch	283044US0PCT	2085
22850	7590	03/18/2008	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			CUTLIFF, YATE KAI RENE	
			ART UNIT	PAPER NUMBER
			1621	
			NOTIFICATION DATE	DELIVERY MODE
			03/18/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/565,542	Applicant(s) HUTTENLOCH ET AL.	
	Examiner YATE K. CUTLIFF	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claim(s) 1 - 20 (in part), drawn to the preparation of acylphosphines, formula (I) wherein R1 is not a heterocyclic ring, R2 is not a heterocyclic ring and R3 not a heterocyclic ring, by reacting the phosphorus halides of formula (II) with the acid halides of formula (III) without isolation of intermediates and with sodium in a solvent the presence of an activator; in the reply filed on January 3, 2008 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6, 16 - 18 recites the limitation "the alkali metal" in line 4 (claim 6), line 3 (claims 16-18). There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leppard et al. (U.S. 6,888,031) and Mann et al. (U.S. 4,751,321)

8. The rejected claims cover, inter alia, a process for preparation of acylphosphines of formula (I) where m, R1, R2, R3 are as defined in claim 1; by reacting an organic phosphorus halide of formula (II) with Y as defined in claim 1; with sodium in a solvent in the presence of an activator and the sodium is pre-sent in the form of a dispersion of sodium particles of a mean particle size less than or equal to 500 μm in the solvent;

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subsequent reaction with an acid halide of formula (III); and the process is carried out without isolation of the intermediate.

Dependent claim 2, further limits R1, R2 and R3 to be independently from each other phenyl, naphthyl and biphenyl, and being unsubstituted or substituted by one to five halogen, C1-C8 alky and/or Cl-C8 alkoxy. With claim 3 limiting R1 and R3 to phenyl and R2 to 2,4,6,-trimethylphenyl.

Dependent claims 4, 9, 10 and 11 identify the activator as chlorobenzene and/or n-butanol or combination thereof. Dependent claims 5, 12 13 and 14 disclose that the sodium is dispersed via a high speed turbine stirrer. Dependent claims 6, 15, 16, 17 and 18 disclose the atom equivalents for the sodium. Dependent claims 7, 8, 19 and 20 identify the reaction temperatures.

Leppard discloses the process of making acylphosphines having a formula (I) by reacting a phosphorous halide of formula (II) with an alkali metal or with magnesium in combination with lithium, or with mixtures thereof, where appropriate in the presence of a catalyst; and subsequent reaction with an acid halide for formula (III); and wherein the process is carried out without isolation of the intermediates. The R substituents, Y substituents, m and n are identically defined as in Applicant's claimed invention. (see columns 1, 2 & 3). The alkali metal can be sodium which is employed in atom equivalents from 4 to 6 or 2 to 3. (see column 6, line 11-23). The reaction temperature ranges from -20°C to +120°C. (see column 6, lines 37-38). The-catalyst can be an aromatic hydrocarbon. (see column 6, lines 39-44).

Leppard fails to explicitly disclose the use of sodium particle dispersion, with the particle sizes being less than or equal to 500 μm in the solvent; the use of n-butanol as a solvent; and the use of a high speed turbine stirrer to disperse the sodium in the solvent.

Mann et al. discloses a process for the production of phosphinites and phosphonites by reacting potassium or sodium aryls with compounds of formula ROPClX in which X is an $\text{R}'\text{O}$, Cl or aryl group, R and R' being alkyl or cycloalkyl groups. The sodium aryl is produced by dispersing the sodium in an inert liquid medium for example a hydrocarbon medium. the dispersion may be carried out with the aid of ultrasonic vibration but is readily carried out by agitation of the molten sodium with the inert liquid medium. (see column 2, lines 6-12). The sodium particles are smaller than 100 μm and preferably smaller than 50 μm . (see column 2, lines 24-26). The sodium is then reacted with a chloroaromatic compound corresponding to the desired aryl. (see column 2, lines 27-29). Mann et al. does not explicitly use a high speed turbine stirrer however, the use of high speed agitation would be an option available to the skilled artisan since it is within the knowledge of the ordinary person skilled in the art.

With regard to the use of n-butanol it is deemed to be within the purview of the ordinary artisan to modify the activator within a known reaction process. This limitation is deemed to be obvious absent a showing of unexpected results.

The difference between Leppard and Mann et al. and the claimed invention is that they do not teach the invention with particularity so as to amount to anticipation (See M.P.E.P. §2131: "[t]he identical invention must be shown in as complete detail as

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is contained in the ...claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an ipsissimis verbis test, i.e., identity of terminology is not required. In *re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).).

However, based on the above, Leppard and Mann et al. teach the elements of the claimed invention with sufficient guidance, particularity, and with a reasonable expectation of success, that the invention would be prima facie obvious to one of ordinary skill (the prior art reference teaches or suggests all the claim limitations with a reasonable expectation of success. See M.P.E.P. § 2143).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YATE K. CUTLIFF whose telephone number is (571)272-9067. The examiner can normally be reached on M-TH 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on (571) 272 - 0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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